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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,822	08/01/2005	Eric Anderson	39281-208683	3817

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EXAMINER	
FERNSTROM, KURT	

ART UNIT	PAPER NUMBER
3711	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/510,822	ANDERSON ET AL.	
	Examiner	Art Unit	
	Kurt Fernstrom	3711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-21 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 10/12/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

According to the "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (1300 OG 142, 22 November 2005), the analysis for determining patent eligible subject matter under §101 can be said to be subject to the following criteria:

1. Does the claimed invention fall within one of the four statutory categories (process, machine, manufacture or composition of matter)? If the answer to this criterion is no, then the claimed invention is not statutory eligible subject matter.
2. If the answer is yes to the first criterion, then does the claimed invention fall within a judicial exception? If the answer to this criterion is no, then the claimed invention would be statutory eligible subject matter.
3. If the answer is yes to the second criterion, then does the claimed invention provide a practical application of the judicial exception? If the answer to this criterion is yes, then the claimed invention would be statutory eligible subject matter, unless the claimed invention effectively preempts all substantial practical applications of the judicial exception, in

which case the claimed invention would not be statutory eligible subject matter.

4. If the answer to the third criterion is no, then the claimed invention is not statutory eligible subject matter and is not eligible for patent protection.

With regards to the first criterion, the claimed invention is a method of qualifying a private customer for space flight. Certainly, the steps recited can be considered a "process" and therefore broadly falls within one of the four statutory categories of invention.

However, regarding the second criterion it is well settled that claims directed to nothing more than abstract ideas, natural phenomenon, and laws of nature (i.e. judicial exceptions) are not eligible and therefore are excluded from patent protection. Diehr, 450 U.S. at 185, 209 USPQ at 7; accord, e.g., Chakrabarty, 447 U.S. at 309, 206 USPQ at 197; Parker v. Flook, 437 U.S. 584, 589, 198 USPQ 193, 197 (1978); Benson, 409 U.S. at 67-68 , 175 USPQ at 675; Funk, 333 U.S. at 130, 76 USPQ at 281. "A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right." Le Roy, 55 U.S. (14 How.) at 175. Instead, such "manifestations of laws of nature" are "part of the storehouse of knowledge," "free to all men and reserved exclusively to none." Funk, 333 U.S. at 130, 76 USPQ at 281. In this case, several of the method steps recited ("familiarizing the private customer...", "evaluating the private customer as qualified or unqualified", etc.) are merely the manipulation of abstract ideas. It is the examiner's

position that such manipulation of abstract ideas broadly falls into the above noted exclusions.

For claims including such excluded subject matter to be eligible, according to the third criterion the claim must be for a practical application of the abstract idea, law of nature, or natural phenomenon. Diehr, 450 U.S. at 187, 209 USPQ at 8 ("application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection."); Benson, 409 U.S. at 71, 175 USPQ at 676 (rejecting formula claim because it "has no substantial practical application"). A practical application of the § 101 judicial exception can be identified in various ways:

- The claimed invention "transforms" an article or physical object to a different state or thing; or
- The claimed invention otherwise produces a useful, concrete and tangible result, based on the factors discussed below.

In this case, the recited steps do not result in a transformation of an article or physical object to a different state or thing. All that is claimed is a method of qualifying a customer for space flight. While there may be some physical transformation in certain steps such as subjecting a customer to increased or decreased gravity forces, this is not the claimed result of the process. The claimed end result of the process is qualifying a person for space flight. This end result is not a transformation of an article or physical object from a different state or thing. Therefore, it is this examiner's opinion that the judicial exception recited in the claims is not practically applied via a transformation.

For eligibility analysis, physical transformation "is not an invariable requirement, but merely one example of how a mathematical algorithm [or law of nature] may bring about a useful application." AT&T, 172 F.3d at 1358-59, 50 USPQ2d at 1452. If the examiner determines that the claim does not entail the transformation of an article, then the examiner shall review the claim to determine if the claim provides a practical application that produces a useful, tangible and concrete result. In this case, it is the examiner's position that the claimed invention produces a result that is not useful, concrete and tangible. The claimed result here is "qualifying a private customer for space flight". First, the claimed invention can arguably be considered to have a specific, substantial and credible utility. However, the claimed invention can not be said to produce a tangible result. Evaluating a person's fitness for flight and certifiying such is an abstraction that is not practically applied and cannot be considered a tangible result. The invention, apart from tangential elements such as subjecting the user to certain gravity forces, essentially amount to abstract steps which take place in the mind. Also, it is this examiner's position that the claimed invention does not produce a "concrete" result. The claimed method of fostering thinking is not sufficiently concrete because the claim requires such a degree of subjective human judgment that a reasonably consistent result cannot be predictably or reliably assured.

Therefore, since the claimed method does not result in a physical transformation and does not produce a useful, concrete and tangible result, it is this examiner's position that the claimed judicial exception is not practically applied and is therefore not eligible for patent protection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the "Space Adventures" document cited in the Information Disclosure Statement. Space Adventures discloses a method of qualifying a person for space flight. In particular, the Orbital Space Flight" portion of the reference discusses a qualification procedure for a private customer to participate in space flight including an evaluation of the customer based on successful completion of the program, and the "Itinerary" portion discusses various elements of the qualification program, including a medical evaluation related to space flight, subjecting the customer to simulated space environment, familiarizing the customer with spacecraft interiors and equipment related to space flight. While Space Adventures does not explicitly disclose steps of enrolling a person in the program and certification of a customer's qualification, Official Notice is taken that such steps are very well known in qualification programs, and would have been obvious to include in the method of Space Adventures. With respect to claims 2 and 12, Space Adventures discloses at the top of page 2 of the Itinerary portion ("Day 2: Morning") a step of subjecting a customer to simulated gravity forces. With respect to claims 3 and 13, Space Adventures discloses at the bottom of page 1 of the Itinerary portion ("Day 2: Morning") a step of touring a space vehicle and training on safety procedures and

systems. With respect to claims 4 and 14, the method of claim 1 inherently involves training a customer for space flight. With respect to claims 5, 6, 15 and 16, the training disclosed by Space Adventures is for both sub-orbital and orbital space flight. Also, the phrase "for sub-orbital space flight"" and "for orbital space flight" are functional, describing the intended purpose of the method rather than reciting discrete method steps. Under MPEP 2114, such language is generally considered to have little if any patentable weight. With respect to claims 7, 8, 17 and 18, Space Adventures discloses at the bottom of page 2 of the Itinerary portion ("Day 4: Afternoon") a step of transporting the customer on a space flight. With respect to claims 9 and 19, an orbital flight is considered to be an obvious variation on the teachings of Space Adventures. With respect to claims 10 and 20, Space Adventures discloses on page 2 of the "Orbital Space Flight" portion that the examination and training have a duration of two weeks. With respect to claim 11, the steps of subjecting a customer to space simulating environment, familiarizing a user with spacecraft interiors and equipment and performing a medical evaluation all inherently have different apparatuses corresponding thereto. With respect to claim 21, the step of educating a private customer on aspects of space light and engineering and dynamics is discloses at the top of page 2 of the Itinerary portion of Space Adventures (Day 2: Morning – "Inspection and Briefing on RLV propulsion systems, reaction control systems and sub-orbital flight mechanics"). Also, the qualification program is performed independently of whether the customer travels into space, as evidenced by the two different prices disclosed for the qualification program and the space flight.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gunning, Marsh, Ransom, Than, Chauhan, Zeff and Barker disclose various methods for space flight training and simulation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kurt Fernstrom whose telephone number is (571) 272-4422. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Kim can be reached on 571 272-4463. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KF
November 7, 2007

KURT FERNSTROM
PRIMARY EXAMINER